

IN THE CLAIMS

Please consider the following claims:

Claim 1 (previously amended): A method for producing in a cellular compartment in a plant a functional heavy chain antibody or an active fragment of heavy chain antibody showing the antigen binding activity of the antibody, comprising introducing into said plant a DNA sequence which encodes an antibody that is a heavy chain immunoglobulin devoid of a variable light chain domain, or an active fragment of said immunoglobulin devoid of a variable light chain domain, wherein antigen-binding capacity is located in a single binding domain, and expressing said antibody or said active fragment, said DNA sequence also including a sequence which expresses a peptide which targets said antibody or fragment thereof to said cellular compartment.

Claim 2 (previously presented): The method according to claim 1 wherein the heavy chain immunoglobulin or fragment thereof is obtainable from camelids.

Claim 3 (previously presented): The method according to claim 1 or claim 2 wherein the plant is selected from tobacco, pea, potato, spinach, tomato or tea.

Claim 4 (previously presented): The method according to claim 1 wherein the heavy chain immunoglobulin or active fragment thereof binds to a protein present in the plant.

Claim 5 (previously presented): The method according to claim 1 wherein the heavy chain immunoglobulin or active fragment thereof binds to a plant pathogen or animal pathogen.

Claim 6 (previously presented): The method according to claim 1 wherein the heavy chain immunoglobulin or active fragment thereof binds to a plant hormone or plant metabolite.

Claim 7 (previously presented): A plant prepared according to the method of claim 1.

Claim 8 (withdrawn): A modified plant having, in a desired cellular compartment, enhanced levels of heavy chain immunoglobulins or active fragments or derivatives thereof or proteins functionally equivalent thereto compared to equivalent but unmodified plants.

Claim 9 (previously presented): Seeds, fruits, progeny and hybrids of the plant according to claim 7 which comprise a DNA sequence encoding a heavy chain immunoglobulin or active fragment thereof.

Claim 10 (withdrawn): A food product comprising a plant according to claim 7 or 8.

Claim 11 (withdrawn): A method for increasing pathogen resistance in a plant comprising introducing into said plant a DNA sequence encoding a heavy chain

immunoglobulin which binds to a plant or animal pathogen, or an active fragment or derivative thereof or one or more sequences encoding a protein functionally equivalent thereto, according to the method of claim 1.

Claim 12 (withdrawn): A method for modulating plant metabolism comprising introducing into said plant a DNA sequence encoding a heavy chain immunoglobulin which binds to a protein present in said plant or an active fragment or derivative thereof or one or more sequences encoding a protein functionally equivalent thereto according to the method of claim 1.

Claim 13 (withdrawn): A method for preparing a heavy chain immunoglobulin or an active fragment or derivative thereof comprising the steps of:

- (i) modifying a plant according to the method of claim 1, and
- (ii) extracting from said modified plant the heavy chain immunoglobulin or active fragment or derivative thereof produced therein.

Claim 14 (canceled)

Claim 15 (new): A method for producing in the cytoplasm of a plant cell in a plant a functional heavy chain antibody or an active fragment of heavy chain antibody showing the antigen binding activity of the antibody, comprising introducing into said plant a DNA sequence which encodes an antibody that is a heavy chain immunoglobulin devoid of a variable light chain domain, or an active fragment of said immunoglobulin devoid of

a variable light chain domain, wherein antigen-binding capacity is located in a single binding domain, and expressing said antibody or said active fragment.